

A Report to the University

Carleton University 1973-74

Part 1 The Faculties



Part I The Faculties

Faculty of Arts Division I

The material contained in this report is based on the responses by faculties and departments to the 1973-74 annual report questionnaires issued by the Office of the Vice-President (Academic). This report summarizes the general policy statements, areas of development and current activities in teaching, research and community relations in the Faculties of Arts, Science, Engineering and Graduate Studies and Research.

Dean's Introduction

Division I of the Faculty of Arts consists of 12 departments in the traditional humanities discipline, the School of Journalism, the Institute of Canadian Studies, and the Committee of Comparative Literature. Although ten Master of Arts programs, and one Ph.D. program—in history—are now offered, the main work of the division is heavily concentrated in undergraduate teaching, as it has always been.

The academic year 1973-74 was, in general, a time of consolidation, of some rethinking of goals. Enrolments were steady or slightly increasing, and funds were as limited for Division I as they were for the rest of the university. Some changes did occur, however: the Department of French concluded a two-year restructuring of their undergraduate program and expect to offer the result for faculty approval during 1974-75; the Department of English put their proposed Ph.D. program in Canadian literature in its final form for submission to the Faculty of Graduate Studies and Research. One overseas program, in Spanish, was flourishing, and others are planned. But for all elements of the division the general problem was maintaining quality in spite of necessarily more efficient operations.

The quality of work done in the humanities traditionally requires the opportunity for the mind of the student to engage the mind of his professor as directly as possible. Hence, the divisional needs, as always, are books, small seminars at the graduate and upper-year undergraduate levels, and time in which to work. Whatever constraints and challenges faced the division during 1973-74 are certain to continue into the coming academic year. Division I will meet them; the quality of its teaching and scholarship will be sustained.

Marston LaFrance

Policies and Lines of Development

Art History

The Department of Art History has seen a growth in the numbers of its Majors and Honours students. It hopes to be able to add a few faculty members over the next few years. The department is studying its first and second year offerings, hoping to reintroduce group discussions and to give the students a solid grounding in more areas of art history than is now possible. The chairman adds: "...recognizing the increasing importance to the department and the university of part-time students, the department would wish to be able to make planned offerings over a period of years to enable such students to organize a well-structured program. At the present time it is very difficult for the department to be able to make the commitment to such offerings in the way it would wish."

At the graduate level, the department is in the process of preparing a proposal for instituting a Masters program in art history. The program, while not established solely for part-time students, will be so structured as to encourage their participation.

Classics

In 1973-74 most of the work of the Department of Classics was directed to undergraduate instruction. With two instructors on leave the load was heavier than usual. Most of the instruction time was directed towards the Classical Civilization program which is in the consolidation phase. It is hoped to add more courses, to increase the variety of options, and to develop special areas for detailed study.

The department is currently exploring the possibility of co-operating with the University of Ottawa to increase the range of graduate offerings. A possibility would be to offer a joint program in classical archeology.

Classics rotates its popular courses in classical civilization among the Day and Evening Divisions and the Summer Session to offer more choice to part-time students.

English

The chairman writes: "For departments of English everywhere, the present is a time of re-evaluation of goals and programs. After the proliferation of faculty, and courses during the sixties, there appears now to be a disposition towards retrenchment and consolidation."

New courses have been introduced. 1973-74 saw new courses in film, *Myth and Symbol*, and *Literature and the Sciences* offered with positive student response. A course in *Children's Literature* will be offered in 1974.

At the graduate level, the Master's program remains essentially unchanged with a steady enrolment. A proposal for a new Ph.D. program in Canadian literature has gone forward for consideration by the Faculty of Graduate Studies and Research.

The chairman sees one of the most serious problems facing the department to be the lack of time available to individual members for scholarship and publication. He believes that the proportions of time spent by members on teaching and administration, should be reduced to allow more time for individual research.

The objectives of the English department for the next few years are to complete the curriculum review of undergraduate courses and programs; to expand off-campus course offerings, such as the University at Noon program; to rationalize and strengthen course offerings in Canadian literature; to continue to co-operate with the French department in the development of new courses in French and English Canadian literature at the undergraduate level; to implement, if approved, a Doctoral program in Canadian studies.

French

A new undergraduate program proposal has been developed by a departmental long-range planning committee. The committee has consulted widely and has formulated recommendations which have been agreed to by the department.

The principal features of the new program are as follows: 1) recognition of increased interest in linguistic studies by the establishment, for Honours students, of two options within the broad framework of the present program, one in French and French Canadian language and linguistics, 2) extended emphasis on the French Canadian content, through the creation of new courses and the requirement for all Major and Honours students to take at least a part of their pro-

gram in that area, 3) strengthening of the third year, which in its present state does not present a sufficiently smooth transition between the second and fourth years for Honours students and does not constitute as valid a final year for Major students as would be desirable, 4) establishment of a more closely integrated network of language courses, together with the creation of new courses in this area as well as in French linguistics, 5) the literature courses aim at providing students with an introduction to the broad aspects of literature in the first year, followed by a historical approach through a number of half-courses in the second year, and leading to a diversified range of concepts and approaches in the third and fourth years, including certain new critical approaches to the study of literature."

German

The chairman expresses concern at the work load in his department, a problem often faced by small departments:

"There was, during the year under discussion, a feeling that the direct claims the university made on the time of full-time faculty in the forms of teaching and administrative duties had definitely reached the upper limit of the tolerable, and that the quantity and quality of research undertaken was already suffering. Given the importance of research for the university as a whole and also for the career progress of the individual faculty member, this situation and these views must give rise to real concern.

"Responsible for this situation are two principal and interwoven causes. With six full-time personnel on campus, the department was having to provide programs at the Majors, Honours and M.A. levels, while at the same time the growing number of administrative tasks devolving on all departments irrespective of size had to be shared among only six people, who do not have administrative support staff beyond one already hard working and hard pressed secretary." Budgetary limitations led to cut-backs which tended to reduce the effectiveness of some of the courses.

History

The undergraduate program underwent little change except for a redesign of the medieval course pattern. Half courses in Japanese and Chinese history were re-introduced for 1974-75. The department is planning to revise the Canadian and European course offerings and to expand

courses in Asian and Latin-American history.

At the Master's level the department intends to broaden its offerings to include Russian, French, British, diplomatic, and medieval history.

The chairman writes, "The major event of the year was the introduction of the Ph.D. program. Our first three students were of excellent quality and we have encountered no problems during the year with the program. The ACAP assessors who visited the department before the beginning of term have recommended the program's funding."

Linguistics

The chairman describes program developments foreseen in the next few years:

"1) With the appointment of Dr. Elaine Pressman, chief of Speech Pathology at the Ontario Children's Hospital, as assistant professor at one-third time, the department is in a position to develop a program in speech therapy. We have made tentative plans for a co-operative venture with the Department of Linguistics at the University of Ottawa, involving both our departments and their medical school at the Ottawa General Hospital in addition to the Children's Hospital, in a bilingual course of study and clinical programs to train speech therapists.

"2) With the establishment of our Certificate in Teaching English as a Second Language, we are able to present a strong and attractive program for students interested in this area. The initial response is strong, and if it continues, it will be one of the main attractions of the linguistics offerings at Carleton...It is worth mentioning that the TESL program is especially designed for non-full-time students, and is open to special and mature students who have professional experience or background for further study in this area even though they do not have and are not candidates for an undergraduate degree."

In addition, three members of the linguistics department have a heavy interest and commitment to the study of Amerindian languages. A faculty member is also interested in computer and other mechanical applications of linguistics and the contributions linguistics can make to communication studies, and has proposed a joint graduate program with engineering and other departments in this area. If successful, this will be another developing area of interest for the department.

Music

The activities of the department during 1973-74 followed the overall pattern established in previous years. Course registrations were up, largely due to increased evening enrolment. Plans for future development centre around the program for non-full-time students to take care of the special needs of music teachers, particularly those in the elementary and secondary schools. The development of the undergraduate program is limited by its concentration in only two areas: musicology/history and theory/composition. The department plans, therefore, to introduce modified instrumental instruction in the form of musical workshops conducted by a resident piano trio or string quartet.

Philosophy

The Department of Philosophy found that the increase in fourth year and graduate level student registrations this past year placed a strain on its teaching resources. No new programs are being considered, but the changes designed introduce flexibility into the Honours program, and the planned rotation of evening and summer courses increase opportunities for non-full-time students. For the first time two senior undergraduate courses were offered in the Evening Division with encouraging results.

The chairman describes plans for the immediate future: "Essentially, the department expects to continue the policies of this year: improving relations with students; reacting to demand while, in particular, maintaining a strong Honours program; the development of a small but high quality individualized M.A. program; consolidation of co-operation with the University of Ottawa, with more interchange of students and an increase in the number of joint seminar/colloquia."

Religion

In general, 1973-74 was a year of consolidation, although three full and two half courses were offered for the first time. The proposed new M.A. program in religion was studied by the Academic Planning Committee, by the provincial Advisory Committee on Academic Planning and finally by the Appraisals Committee of the Ontario Council on Graduate Studies. The department is encouraged by the favourable reports it has received and hopes to be able to accept three or four graduate students in September of 1974.

The chairman describes the proposed program: "The new M.A. program will

admit students with an Honours bachelor's degree in religion (or the equivalent). Students will choose a program of study from one of three areas: 1) Comparative Religion, 2) Biblical and Ancient Near Eastern Studies, and 3) Modern Religious Thought and Culture. The student will write a thesis on a topic in his chosen area (equivalent to two full courses) and take three other courses designed to enhance his competence in his chosen area and to supplement this specialty with some study in religion outside that area. The aim will be to develop competence in a specialized field without ignoring the claims of general competence in the field of religious studies.

"The department has under consideration but has not yet fully developed an Honours program and an M.A. program for teachers who anticipate teaching religious studies in the high schools. The high schools of Ontario are rapidly introducing religious studies into their curriculum. The new courses are frequently manned by teachers who have considerable interest and very little training in the field. This could make or break student interest in religious studies."

Russian

The academic year 1973-74 was for the Department of Russian a year of leveling off in enrolment and of strengthening and rationalizing the academic program. Although no graduate program is envisaged, a new Combined Honours program in Russian and Linguistics has been approved for students interested in English to Russian translation. The chairman describes it: "This new program is aimed at satisfying some needs on the job market and answers to a clear interest among the students. It is also a program which is considered as the spring-board for a series of research activities in the field of linguistic problems in contrastive studies of Russian and English and in comparative studies of literary styles in Russian and other literatures.

"A successful development of this program could eventually be expanded to other languages being taught in the department, Ukrainian, Czech, Polish, Serbo-Croatian and others, in the future."

The department is also interested in increased participation in the Comparative Literature program and in the Institute of Soviet and East European Studies.

Spanish and Italian

This department, which is combined for administration reasons, operates as two almost separate units. The Italian section is small and very active. Its plans for the future include an experimental course for Italo-Canadians, a possible intensive course for Majors, a possible reading course for students of other disciplines who want a reading knowledge of Italian, and the introduction of a translation course, to be discussed with the University of Ottawa.

The Spanish section continued in 1973-74 to offer its programs at the undergraduate and graduate levels in Peninsular and Spanish-American literature. Its courses in Spanish and Portuguese language provide the necessary language skills for Majors and Honours students as well as serving interested students from other disciplines. A new course, *An Introduction to Hispanic Theatre*, was offered and its students presented two productions during the year. A videotape was made of the second production which will be available as instructional material here and at other universities.

The new intensive program which was mentioned earlier will start in September 1974. The department is interested also in the growth of Latin American studies. The chairman comments: "The department welcomes the new courses with Latin American content being offered by the Departments of Geography and History, and is especially pleased to note the introduction of the interdisciplinary course 04.264 *The Evolution of Latin America: Problems and Prospects*. It is hoped that this step will lead to the formation of the Interdisciplinary Committee for Latin American Studies that we recommended in February 1972 to the Academic Planning Committee of the Faculty of Arts in the document *Latin American and Caribbean Studies: An Exploratory Report with Recommendations for Carleton University*."

The School of Journalism

This has been a year of consolidation at the undergraduate level while preparations have been made for the initiation of a graduate program. The new Master's degree, the first of its kind in Canada, will require the expansion of the one-year program which will serve as a qualifying year. The director explains the purpose of the new degree: "The development of the graduate program reflects the philosophy of development that has been operational for a number of years now. Our philosophy has been to

recruit to the staff individuals with very substantial and sometimes outstanding careers in journalism as well as individuals with advanced training in academic fields such as communications, political science and literature which impinge directly on journalism. The idea has been to develop a teaching faculty with professional and research skills. To date the experiment has been successful and moving into a graduate program will permit for a more serious and intensive research program, while at the same time preserving the 'professional' bias of the school.

"In our budget for 1974-75, a special research category has been created for the first time. Hopefully this will accelerate the speed at which a body of scholarly knowledge on Canadian journalism is created."

Institute of Canadian Studies

The institute gives an interdisciplinary M.A. degree with students working out their own programs with the aid of the director and faculty advisors. All students take the Interdisciplinary Seminar, led this past year by the director.

The design of the Institute of Canadian Studies is unique in Canada and appeals to only a small percentage of students so an effort is made to inform prospective students in all parts of the country, largely by means of a brochure.

The director reports on new projects: "With the co-operation of the Department of Art History and the National Gallery of Canada, the first students were accepted in the program area of Canadian Art History. Instruction and supervision provided by curators of the gallery were excellent.

"The director participated in discussions about the developing at Carleton of a group concerned with research on communication in Canada. It is envisaged that such a group might have a close relationship with the institute.

"In the next few years we foresee the further growth of sound interdisciplinary work in Canadian fields. One area in which it is hoped to attract additional student interest is that of communication."

Comparative Literature

The chairman's report describes the structure of this unit: "Comparative literature is a committee of the Faculty of Graduate Studies and Research, offering a program leading to the M.A. Courses offered annually (four half-credit courses on literary theory at the 400 level, approximately six full courses at the 500 level), though intended primarily for students in comparative literature, are open to suitably qualified students from elsewhere in the university.

"Comparative literature is staffed by one full-time and two one-third members of faculty. In 1972-73 two sessional lecturers gave courses. The rest of the work (teaching and administrative) in comparative literature is carried out through the good-will and interest of a sizeable number of the 30 official members of the committee...

"In addition to the teaching of courses (which with the exception of the 400 level courses are new titles in most years), members (full-time and occasional) supervise students' research as well as conduct their own, direct theses and administer the comprehensive examinations (which often requires substantial preparation on the part of the examiners, since students choose several topics or problems from a large list, covering and cutting across several literatures and periods).

There are difficulties in operating a program with a committee structure and the chairman comments that it is not easy to plan and administer a program which has to rely heavily on faculty members with prior commitments to their own departments, a problem common to all interdisciplinary units.

Teaching Methods

All sections of Division I see teaching as their major activity. There is a general effort to maintain small classes and courses with large registrations are usually sectioned.

Teaching methods in the non-language programs follow patterns which have traditionally been found to be successful: the standard lecture; lecture-discussions; seminar-discussion; and tutorials. Some experimentation in teaching methods is going on. Philosophy reports a number of different evaluation techniques in use, though none that could be described as "new". The extensive use of very carefully prepared sequential material in handout form in one course makes it largely self-paced, while the *Introduction*

to *Philosophy* course has a grading technique (the student has a wide range of options) and an organization of discussion groups into topic areas, together with the extensive use of handouts which make it more flexible than the traditional approach.

The School of Journalism, which offers courses ranging from the professionally practical to the theoretical, uses a wide variety of teaching styles. At the theoretical end of the spectrum, teaching methods are fairly traditional, but there has been considerable innovation in instruction in professional practice. Students in third year and in the one-year program do several radio newscasts daily over Radio Carleton and publish the *Centretown News*, a central Ottawa community newspaper. They also produce television newscasts, albeit only internally, and each student is required to spend two one-week apprenticeships working in the media or information related fields. In addition, students frequently produce television or film documentaries in seminar courses and Honours research projects may well take the form of broadcast or film documentaries or substantial pieces of print journalism.

The language teaching in most departments relies heavily, especially at introductory levels, on the extensive language laboratory facilities which have been developed at Carleton. The German department uses audio-visual classrooms designed for language teaching.

The French department is putting increasing emphasis on student participation, not only in senior seminars and tutorials, but also in lower level courses. The Russian department describes its approach as "eclectic... with a predominant preference for the audio-lingual approach, with additional reading."

An interesting feature in some of the departments, notably Spanish and Italian, classics, and art history, is the program abroad. There are classics and art history courses in Italy as well as the Italian program, and St. Patrick's and the Spanish department have co-operated to implement a two-term intensive Spanish program, with two and one-half credits in the first term at St. Patrick's and two and one-half credits in the second term in Spain.

Division I and the Community

Interest in the humanities and in languages is very high in Ottawa and all sections of Division I are active, formally and informally, in responding to and encouraging this interest. Older students and those with special interests take courses during the day and in the evenings; almost every department has public lectures or symposia, and both radio and television in the area draw heavily upon the faculty.

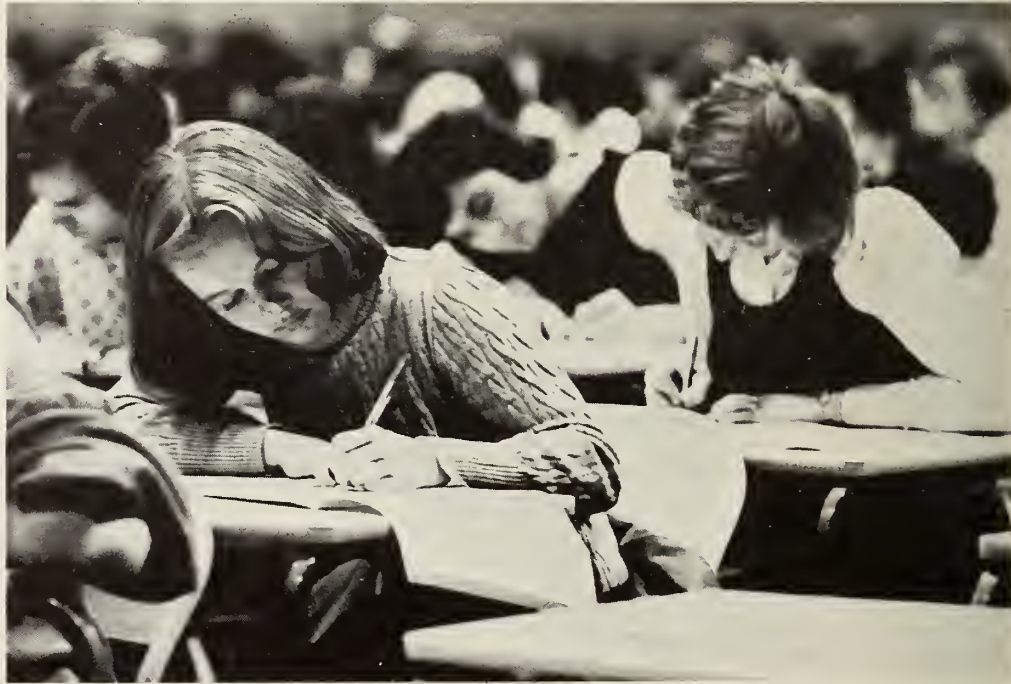
Special courses are being developed: The English department is offering a University at Noon course downtown, evening language courses are available, and a member of the Russian department organized courses in Hungarian at the Hungarian parish in Ottawa. The music department's extension course in conjunction with the National Arts Centre Orchestra was very popular as was the Department of Philosophy's course on *Women's Liberation*. The Spanish department's arrangement with CIDA has been suspended, but it hopes to encourage government personnel to take the new Intensive Language program.

The language departments have special responsibilities and opportunities in the community. The Italian section has been very active, in radio and television, co-operating with the local newspaper, *L'Ora di Ottawa*, doing research on the Italians of Ottawa, and with an OFY grant running an office in the Italian section to provide free services to those requesting them. The French department has worked with French teachers in the area and helped organize a French contest for secondary school students. The Spanish department maintains contact with the Embassies of Spain, Portugal and the Latin American republics. The Spanish Embassy helped finance the annual Spanish play which was shown to the general public and to high school teachers and students of Spanish.

Journalism students are very much involved in the community as part of their training. Several student broadcasting projects were aired on major radio and television stations. Films on topics such as air control, and STOL aircraft were sold as well as a radio documentary on children's views of the adult world. The journalism faculty are also heavily involved with the media as editors, writers, and radio and television commentators.

Members of most departments are engaged in work with disciplinary associations, and government and community organizations. The Seventh Congress of the

International Comparative Literature Association was held at Carleton, McGill, and the University of Montreal. The Department of Linguistics co-sponsored the annual meeting of the Ontario Confederation of Teachers of English and sponsored the first meeting of the Linguistic Circle of Ottawa. Members of the Department of History were active in the Ottawa Historical Association, the Advisory Council on Public Records of the Public Archives of Canada, the Royal Ontario Museum, the Canada Council Commission on Graduate Studies and the Ottawa Branch of the Canadian Institute of International Affairs.



Faculty of Arts

Division II

Dean's Introduction

The Social Sciences Division of the university experienced, in 1973-74, a further growth in undergraduate students, and at the same time maintained its very strong position in graduate studies. The division has the largest undergraduate strength of all the divisions of the university and about one-half of all graduate students. Faculty, support staff and material resources are unfortunately not available in proportion to relative work load. Therefore, departments devoted an extraordinary effort to the problem of maintaining good quality education for undergraduates in the face of excessively large classes and a very heavy commitment to individual tutorials and research supervision for senior Honours students.

Without detracting from important work with undergraduates, it can be said that the past year was exemplified by significant events in graduate studies in the division. The high calibre of our Ph.D. programs in sociology and political science was recognized in the report of the Advisory Committee on Academic Planning of the provincial universities. Satisfactory assessments by the same organization of our Ph.D. programs in economics and the graduate program in geography were officially endorsed. The graduate program in social work was substantially reorganized and encouraged by significant, newly-found, grant support. The graduate program in international affairs continued to expand and improve, again with substantial funding by non-governmental agencies. The program in public administration was strengthened by staff additions, the implementation of a new curriculum, and co-operative planning entailing the University of Ottawa. The Department of Psychology introduced a new specialization in the history of psychology in its Ph.D. studies. The proposed M.A. program in anthropology was appraised as worthy and officially approved for provincial funding. There was a general increase in the quality and quantity of applications for student spaces in all of these programs. There would seem to be good grounds for the inference that student interest is a demonstration of confidence in our efforts.

R.A. Wendt

Policies and Lines of Development

Division II of the Faculty of Arts consists of the Departments of Geography, Law, Economics, Political Science, Psychology, Sociology and Anthropology, the Schools of Commerce, Public Administration, Social Work, and International Affairs, and the Institute of Soviet and East European Studies.

With such a range of units there is a great diversity of activities and problems. There seem to be some trends in common, however: a pressure of students, especially at the graduate levels, a lack of space, and restricted budgets. The dean comments on one aspect of the faculty workload: "...for the period September 1 to October 15, 1973, within the division there were 16 Master's thesis examinations, four Master's comprehensives, five Ph.D. theses and three Ph.D. comprehensives. It is agreed that the period selected is one in which an unusually heavy load of such work is encountered. Nevertheless it is one aspect of work to which I think particular attention might be drawn."

Space problems are acute in psychology, public administration, and the School of International Affairs. The School of Social Work is located in the engineering building with the problem of a permanent location still to be solved.

Budget restrictions are referred to by almost all chairmen and directors. These restrictions are felt in many areas: from inability to hire needed faculty and sufficient sessional lecturers through difficulties with support staff, with equipment replacement, and lack of money for travel.

All sections report accomplishments and activities in spite of problems. Geography reports on reorganization of support staff to enhance capability in cartography, computer mapping, data processing and research; program strengthening at the M.A. and undergraduate levels; increasing research activity and grant support; and improved contacts with local high school teachers. The Department of Law has been strengthening its links with the Law Reform Commission of Canada and has begun proceedings to establish a jurisprudence centre on campus. This department is studying the possibility of establishing a program of professional legal studies at Carleton.

Political science is consolidating and rationalizing its course offerings. A favourable ACAP report on its graduate work means that there will be no radical change

in the program, but the department's policy is to move gradually from mass teaching toward more individual supervision.

The Department of Economics and the School of Commerce face their most serious problems in their rapidly expanding enrolment. As the school has no faculty of its own, the Accounting department group finds itself burdened with academic counselling and program registration for the 400 students enrolled in the School of Commerce. The school's development plans are focussed on a broadening and strengthening of the basic program, with additions in marketing and production and a complete rethinking of the requirements in the behavioral sciences. The school is waiting for the results of the President's Committee on Administrative Studies before developing long-range plans. The Department of Economics, with growing enrolment in its economics courses as well as with its increased need to staff courses for the school, has problems with worsening faculty/student ratios and too great a dependence on sessional lecturers. Staffing has been very successful with five outstanding new faculty members joining the department this year.

The Department of Psychology devotes most of its time trying to keep up with the demands of the exceptionally large number of students taking its courses. Discussion is going on about the way to provide the best opportunity for all these students and the chairman states: "It is clear that we cannot continue as we have in the past trying to provide a general level of education at all levels of undergraduate instruction. Some way must be found to raise the quality of education for these students, particularly at the third and fourth year levels. Several different alternatives have been suggested although no final decision has been reached. There is a strong feeling that the only practical way to achieve the goal is to: 1) continue unlimited enrolment in 49.100 and basic general courses in the second year; 2) increase the number of specialized third and fourth year courses; and 3) restrict enrolment in third and fourth year courses so the students and faculty can interact in a more meaningful way. It would be hoped that the second year courses would continue to be sectioned into lecture classes of 60-70. However, this may not be possible because of limited resources. Certainly various teaching approaches are being explored to help us out of this dilemma, but they all seem to have some major drawback."

Consolidation has been the principal theme of the Department of Sociology and Anthropology. During the year the department gave lengthy consideration to a restatement and codification of its personnel proceedings, to a review of the appropriate norms and forms of student assessment, and to the adoption of a uniform course and teacher evaluation in all undergraduate courses. It was less successful in arriving at a new and more effective counselling and advisory system. There has been a decline in undergraduate enrolments and some evidence, in the case of the Major degree, of a significantly increased proportion of part-time students.

The School of Public Administration looks upon the next few years as a period of modest growth which will enable it to consolidate its program. It is still inadequately staffed and draws heavily on faculty in other departments. A combined project of Carleton, the University of Ottawa, and the federal government to establish a joint program for training federal administrators will increase the numbers in each year of the program to 40 or 50 full-time graduate students.

The School of Social Work had much to report for this year, a very active one, as the new program got underway. The director writes: "The addition of a new faculty gave substance to the program and particularly to new curriculum areas such as policy, administration, and research. The governing structure has worked quite well and student-faculty co-operation in this forum has been very high. The general climate has been good and en-

thusiasm high. There is no question about the new direction of the school having been established. We have come a long way in eight months." Among many plans for the future, ranging from consideration of undergraduate education to the Ph.D. level, a few seem particularly pertinent. One of these is a new stress on integration with the rest of the university and another is the development of a special program, planned for the fall of 1975, to encourage the enrolment of native students.

The Institute of Soviet and East European Studies faces problems common to all the interdisciplinary units of the university: the problems of developing a program which must be staffed with faculty from other departments with their own priorities and needs, difficulties that associates have in combining their work in their departments with their responsibilities to the institute, the fact that students may be barred from taking courses they need because of restricted enrolments or particular pre-requisites, and, of course, the perennial problem of lack of funds. The institute is proud of its record, in spite of the difficulties: two new books will be published this year to add to the five already in the Carleton series on Soviet and East European Studies; 26 public lectures were given by associates outside of Carleton; four Canada Council grants and one Carnegie grant were received; the Journal of the Canadian Association of Slavists is attached to the institute; and academic exchanges exist with the University of Leningrad and with Hungary. Under a grant from the Donner Foundation a pilot pro-

ject on East-West relations was conducted, which resulted in four published papers, a bibliography of East-West trade, a round table conference, and a volume to be published in the fall of 1974. The institute offers the only Honours program and Masters degree in Soviet and East European Studies given in Canada. The pattern of activities was substantially the same last year as in recent years with an unchanged curriculum, although the enrolment of 43 students in the M.A. program and nine in the qualifying year was the highest ever experienced. As in the past, the school sought to enrich its program and to enhance the international character of its activities by using the services of a number of visiting professors. A variety of special seminars were also organized to take advantage of short term visitors. Also following past practice a special conference was held and on this occasion the topic was United States-Canadian relations with special reference to trans-national actors.

Research activities play a large part in the work of Division II. The lists of publications and scholarly papers presented are long and the topics varied. Articles listed by the Department of Political Science, for example, cover topics such as the sociology of jazz, studies of the Cree Indians, the Magris, the Greenland and Canadian Eskimos, black power in the Caribbean, the environment and James Bay, marriage structure, married women dentists, and vampires.

There is an increase in multi-disciplinary research projects. This is commented on by the chairman of the sociology department, and in social work the director reports that a number of research grant requests have been developed co-operatively by the faculty so that research projects will be closely linked to the students' academic and professional work.

The Department of Geography notes a growth of grant support. The chairman writes: "A gratifying development in the past year has been the increasing research grant support attracted by the members of the department engaged in work on northern near-surface environments, ground thermal regimes and frozen soil behaviour. There is direct applicability and high interest in this work because of the Arctic pipeline and other Arctic development proposals . . ."

A detailed account of research projects in each department of the university is published every second year by the Information Office.



Undergraduate Programs

In the division as a whole no major program changes were made last year at the undergraduate level. Several departments, though, report interesting developments:

Sociology, in its second year of a combined Sociology-Anthropology program for Majors, added a course on *Canadian Society*, and studied plans for a change in form and an increase in the number of sections of the "fused" introductory course. Plans were made to introduce "open-slot" courses at the second-year level for added flexibility, and to offer an advanced course in general sociology for senior students from other departments with no background in the discipline. The chairman notes questions still facing the fused program: "For the moment the fused program, ...has neither achieved its fullest potentialities nor encountered its greatest difficulties. In part, its success or failure will depend upon whether it is possible to maintain a joint department in the face of size, organizational complexity and the pull of diverse disciplinary and professional commitments. In part, too, it will depend upon a degree of imaginative course design, collegial collaboration and effective teaching considerably greater than is ordinarily required. In part, finally, it will depend upon a careful choice between alternative strategies - e.g. fusion as the foundation of the student's program, as at present, or as its capstone, as others have proposed. All of these matters will bear a great deal of attention during the next year or two."

Both political science and law emphasize the interdisciplinary approach in their undergraduate work. The political science chairman comments: "For example, we are very happy that during the year details of a Combined Honours program in Journalism and Political Science were worked out and approved for inclusion in the 1974-75 calendar." Another interesting feature of the Political Science Report is the description of the Political Science Forum, organized by Majors and Honours students, which, as well as arranging social events and film showings, made a systematic evaluation of teaching and courses in the department. The president of the forum was made student assistant to the chairman, which improved student input into the system.

Graduate Programs

Most departments report changes in graduate programs, although in general there are no major shifts. One department, law, is contemplating the introduction of an interdisciplinary graduate program, probably in jurisprudence.

The Department of Psychology has established three research/service internships for the summer and the 1974-75 academic year to provide graduate students with various research and service opportunities in the community. It has also implemented a Ph.D. degree in *Problems in the History of Psychology* which represents a unique program in Canada.

Geography has had an exceptionally good group of graduate students this past year and has made several significant steps toward improvement in the nature of graduate studies in the department: a graduate research seminar for human geography students was initiated, with input from several faculty members; a periodic departmental colloquium involving graduate students and faculty members was begun in the fall term and continued through the year, held in the evenings at different homes; the conversion of a lab into a graduate student room proved particularly valuable in enabling students to interact with each other in their work. A greater interest and input from the graduate students into departmental decision making was appreciated by the chairman.

The chairman of political science notes that the department's graduate program at the Ph.D. level has undergone a sort of "quantum leap"; the number and quality of graduate students now being accepted is straining the department's resources. He goes on to say: "Perhaps for the first time, we are able to say that we now compete for the best potential graduate students in the discipline throughout Canada. As evidence of this happy condition, a number of students have managed to publish their research essays written during the year. In our effort to create a community of scholars in our department, faculty members are encouraged to involve their students in their research activities."

As mentioned earlier, the program of the School of Social Work has undergone a major overhaul. The director sums up the changes of the past year and those expected in the immediate future: "There have been many curriculum changes over the past year and this report shall highlight some of them: 1) a new policy and administration program, 2) a new part-time degree program, 3) a new course on the status of women and 4) a new model of direct prac-

tice has been articulated and curriculum content outlined.

In addition to the above individual changes, there was a general report presented and accepted outlining a new curriculum design for 1974-76. This report has been accepted by the Student-Faculty Assembly at his point. Some of the major elements are as follows: 1) The school will move onto the university timetable as of September 1, 1974. 2) The school will institute a third term (summer). 3) A field seminar will be established in place of the traditional field placement experience, and 4) The curriculum will consist of five major curriculum areas: research, field seminar, social science, intervention, and social policy analysis."



Teaching Methods

With the financial difficulties faced by most departments and with the pressure of student numbers efforts are being made to look at teaching procedures and course offerings. Some departments are reducing the total number of courses to create a more manageable program. The Department of Sociology and Anthropology is experiencing a shift in emphasis towards the research project as a mode of learning along with a decline in discussion groups.

Several chairmen in this division mention the efforts to restrict section sizes in introductory and compulsory courses. The Department of Political Science is carrying out teaching experiments with introductory courses "to personalize the teaching-learning process in order to reduce, if not to eliminate, the students' feeling of alienation which is not uncommon in large classes."

The chairman of political science mentions a series of developments in undergraduate teaching in his department, including increasing efforts toward co-ordination of course sections, simulation exercises as a pedagogical technique, and direct case studies of functioning political institutions.

The chairman of the Department of Sociology and Anthropology stresses the continued importance of the lecture method, pointing out that it is often used in combination with other approaches, including the provision of special materials, prepared handouts, reprints, etc., available in the department, the Social Science Reading Room, or the library, and the Data Archives, a divisional facility maintained by the sociology department. Members of the department offer a large number of tutorials which provide opportunities both for flexibility and variety in the program itself and for independent work in the learning experience of students. A particular example of program development is given in the following statements: "This year the department presented its first course, one section of *Introduction to Human Ecology* (56.253*), in a fully modularized format. Since a reasonably careful evaluation, as well as other indicators (e.g., a substantial increase over the initial registration to a final enrolment of about 100, the high level of student performance on assignments, etc.), was very strongly encouraging, the course will be revised and repeated next year."

The director of the School of Commerce describes developments in the school: "Teaching methods in the commerce pro-

gram reflect the approaches of several contributing departments. A business policy course which will be introduced in 1975-76 will be offered directly by the school to commerce students and will be offered on a team-teaching basis.

"In presenting courses in accounting, over-reliance is placed, of necessity, on the lecture method. The case approach is used at the second year (marketing) and third year (financial reporting and managerial accounting systems) but large class enrolments raise very serious problems. Courses intended as seminars and/or independent research projects suffer seriously from inadequate staff resources.

"It is our intention to combat the staffing problems in Accounting by more reliance on student assistance at the introductory level and by a strong program to attract special professional lecturers, on a part-time basis, for more senior courses. These solutions are temporary at best and will raise immediate demands for special budget considerations. They are unavoidable minimum requirements."

The chairman of the Department of Geography expresses his concern for undergraduate teaching: "There is one other need which I think is not fully appreciated, if the overall quality of teaching in the university is to be improved. It is not merely enough to provide money for teaching development projects, or even to "buy" time for course improvement. There is a need for incentive, for the instructor to feel that time spent on improving the quality of teaching is appreciated by the university and is given equal priority with research activity. While we give lip service to the equal importance of teaching in the present policy on promotion, we do not honour it in reality.

"I personally doubt that there will be a substantial overall improvement in instructional quality in this institution until the university gives it equal credit with research activity, and does this clearly in tenure, salary and promotion considerations."

The Geography Resources Room and Map Library serve as reference, resource and working places for students in all courses. Supplementary reading references, article reprints, etc., as well as a full set of geography Honours research essays, M.A. theses and student cartography projects are available for reference in the Map Library, in addition to the basic map, atlas and documentary materials therein. Lab exercises, materials and other specific course resource references are available in the resources room. The

resources room, although not large, is an accessible location and has been heavily utilized by students since its opening in January, 1974.

Graduate Teaching

At the graduate level, developments in several departments are the internship programs in agencies, government departments and other locations. The professional programs such as social work and public administration have had internships for some time, but other sections of Division II have begun to institute similar arrangements. Sociology and psychology have such programs and the chairman of geography mentions the need in his field. The director of the School of International Affairs describes the variety of experiences they give their students: "Within the limits of our resources we attempt to assist students with their summer research and with their placement either in jobs or in higher academic programs. We also try to assist them in taking advantage of opportunities for international study and travel. For example, one of our students attended an international conference of students on European security in Bucharest at the expense of the Romanian government; another is undertaking an internship program with the Canadian Hunger Foundation, a non-governmental aid organization. Others have been aided in studies in Malaya, Europe and Hungary. Next year, our seminar on strategy will visit Washington for one week of discussions and consultation with United States specialists. We hope in the future to organize similar travelling seminars for students taking other programs."

In the schools and the institute, where the programs are of an interdisciplinary character, team teaching and interdisciplinary seminars are common. The director of the School of Public Administration writes: "Public policy seminars in 1974-75 will be team-taught by two academic staff from different disciplines. This will be achieved by voluntary agreement to increase teaching loads by one-half of a half course.

"This method is essential to foster a genuine interdisciplinary analysis of the selected policy fields in each policy seminar half course."

The Institute of Soviet and East European Studies puts on one seminar stressing the interdisciplinary, comparative approach. "In 1973-74 concentration in the fall semester was on comparative analysis of political culture and ideology, patterns of historical development, society and

culture, political system and social stratification and economic management of the Soviet Union and Eastern European countries. In the winter semester the seminar studied all the above in depth in one country — Yugoslavia."

Graduate students get assistantships and are employed by all sections of Division II. Almost all chairmen mention that the funding is not sufficient for these students. The director of the School of Social Work puts the rather special case of his students: "With respect to support for students, the time is long gone when social work students came to the university with bursaries, grants, and other sources of financing. The horn of plenty has been sealed up. Combined with this is the fact that many of the candidates for our program are older than the usual graduate student; many are married; and many have children. Therefore, the need for financial support is great and the source of support is limited."

Part-time Students

Division II provides an extensive evening program and most sections have part-time students. In political science all programs except the Ph.D. can be pursued on a part-time basis and are usually taught by regular faculty members. The chairman says: "In order to improve the variety of courses available to part-time students, we have adopted a policy whereby each undergraduate course is offered in the evening (either summer or winter) at least once in a three-year cycle. Each compulsory course is offered yearly in the evening session. Many graduate courses are routinely offered in the evening or late afternoon (4 p.m. — 7 p.m.). We should add that this policy places a heavy burden on our faculty, since each faculty member is expected to teach in the evening at least once every second year, and many of them do so every year."

The School of Social Work is beginning its first part-time degree program in the fall of 1974 with a small anticipated enrolment. This is the beginning of the school's efforts to expand the opportunities for part-time degree education in social work.

For the first time, part-time students were included in the Department of Geography field camp which was held in the fall. This was done by extending the camp over two weekends and including the part-time students along with the regular students for the weekends.

The chairman of sociology raises the interesting point that while the university has taken justifiable pride in its willing-

ness and ability to offer part-time students much the same program as is available to full-time students, it may well be that this is no longer in the interest of part-time students and that something else is required. This is a question which is being studied by the Senate Committee on Continuing Education, with a plan, for 1974-75, to offer some university courses in Lanark, as well as some noon-hour, downtown courses.



Division II and the Community

Many of the ways in which Division II interacts with the community have been mentioned previously. Most sections have close connections with varying outside groups including many government departments.

Public lectures and conferences are popular in this division, ranging from the School of Public Administration's series on *Government-Industry Relations*, the Conference on Canadian Social Policy sponsored by the School of Social Work, political science lectures and seminars on topics from *The Right to Privacy* to *Allende, Chile, and the Democratic Prospect*. Many faculty members in this division act as consultants to various government departments and contribute to public discussion through the media and community meetings.

Special relations exist between some departments and the school system. In March the Department of Geography's High School Liaison Committee organized a colloquium on the high school geography curriculum with approximately 35 secondary school teachers from the Ottawa and Carleton boards attending. The meeting led to a desire among some of the teachers involved for a more detailed examination of some of the problems identified in the colloquium and a workshop session was held in June. The Department of Law offered a Law for Teachers program during the summer through the Office of Continuing Education.

Another important interface with the community is through faculty and student research projects. The School of Social Work's field placement program and research program is perhaps the most closely linked with the community though the psychology, sociology and political science departments study and work with many local groups. The Department of Sociology and Anthropology has done some preliminary work toward the creation of an Ottawa area study — the collection and extension of sociological information about the community. Students of the School of Commerce with a special grant from the Ontario Ministry of Industry and Tourism ran a consulting service for small businessmen.

Faculty of Arts St. Patrick's College Division

Dean's Introduction

The most significant event in 1973-74 was the relocation of the college to a new building on the Rideau River Campus. The new accommodations provide a good physical environment for a college and have met with general approval. Excessive sound transmission within the building presents the only drawback.

A special senate committee studying the future role of the college has been holding sessions since February 1974. It will be bringing out its report in January 1975. The committee members have been enthusiastic about the future possibilities for the college.

In general there is a feeling that a new era is dawning for the college and the next few years should see interesting developments. A period of budgetary restraint might appear to be an inopportune time for new departures, but if the university is to continue responding to the educational needs of the time it can never be content with simply maintaining things as they are. Thus, the prospect of new developments at the college is a hopeful sign for the entire university.

In the meantime the college's academic program proceeds along established lines. While no new major programs are contemplated prior to the completion of the senate report, individual disciplines have introduced a considerable number of changes.

H. A. MacDougall

Policies and Lines of Development

Many coordinators of disciplines describe their policy in terms of developing courses in co-operation with other disciplines. Economics, sociology, political science and psychology all stress a multi-disciplinary approach to the development of a program in social policy. Classics, English, history, philosophy and religion also mention an interest in working closely with other disciplines. Many cite their commitment to the Unified Liberal Arts Program as an example of their work together.

Others have special goals: fine arts is concerned with the difficulty of equating St. Patrick's courses with those of the Department of Art History and making sure students understand the situation; mathematics is interested in developing a workshop approach to its teaching; French is concentrating on practice in the spoken language and encouragement for those wanting to be bilingual; Spanish works closely with the main campus department and has developed an Intensive Spanish Program involving two terms of study devoted entirely to Spanish, the first at St. Patrick's and the second in Spain.

Undergraduate Programs

Several coordinators indicated that program development had slowed down while the college waited for the report of the Senate Advisory Committee on St. Patrick's College. However several new courses are beginning in 1974-75. Classics, which gives all its courses in English, has co-operated in two new courses: *The History of Comedy and Satire* cross-listed with English, and *Social Problems in Antiquity* cross-listed with history. Economics, which is continuing its sequence of evening classes to permit non-full-time students to complete a combined major, also has given this summer a new course in the *History of Canadian Economic Thought*. Political science has a new course, *Theory of Law and Politics*, cross-listed with law. Religion is offering *Religion and Art in India, China and Japan* to be taught by Professor Chung of St. Patrick's and Professor Devdas of the main campus department.

The January admissions program led to the development of special double-courses in English, French, mathematics, economics, history, psychology, sociology and Spanish. The main campus Departments of German and Physics put on double courses for January students, while the Department of Law offered a half course at St. Pat's.

The French Language program has been in operation two years. Its oral course, designed to be taken in conjunction with other French courses, has six contact hours per week with instructors; four hours discussion and four half-hour lab periods. At least two hours of individual study and lab work is expected of students.

1973-74 was the first year of a new philosophy program at the college. Courses are arranged in three streams, aiming not only at preparing majors for further work in philosophy but also at providing courses relevant to majors in other disciplines. Discussions among faculty and students indicate that the approach is worth developing, and a particular effort will be made to link the stream concerned with the problems of philosophy closer to social sciences and their philosophical problems.



Teaching Methods

St. Patrick's as a whole stresses personal contact with students, and the ease of access to faculty in the new building encourages this. As the English report puts it: "At all times, we try to generate a close relationship between student and professor so that teaching continues outside the classroom. This is especially true concerning the nature of written assignments and the discussion that arises before and after writing."

While lectures continue to be the traditional teaching method, discussion groups and seminars are popular. Economics offers a multi-disciplinary and problem-oriented staff-student seminar at the third year level organized by Professors Neill and Clarke. Philosophy favours the seminar approach and is introducing an independent study course for individual students or small groups to pursue areas of special interest. Students are also being asked to make proposals for courses on issues they regard as particularly relevant socially and politically.

Experimental work with modular course design is being carried out in economics and psychology. The economics course will be available on Saturdays as well as in the evenings. Psychology has two faculty members with research interests in instructional development: J.F. Campbell and R.G. Walters. It is also very involved in community-based learning, and the use of undergraduate students as teaching assistants.

St. Patrick's College and the Community

St. Patrick's is active in its relations with the community, encouraging its own alumni association, visiting local high schools, and inviting the public to lectures and films. The French Ciné Club provided a regular series of good French films; psychology put on a series of excellent lectures from invited guests from business, government and outside agencies; religion, philosophy and English put on extension and continuing education courses, and fine arts had a weekly display of art material in its large hallway display case. Professor Clarke of economics put on an in-service training course for civil servants in statistical techniques.

The psychology program of placing students with the Rideau Correctional Centre and the Rideau Regional Hospital School is proving successful and arrangements are being worked out with other groups. Students have been involved at Brockville Psychiatric Hospital, the Royal Ottawa Hospital, homes for the elderly and community-based facilities for the retarded. An art exhibition by students at the Alfred Training School was on display at the college.

In every discipline there were contacts of many kinds with government agencies, professional groups, and community groups. In addition, students arranged activities such as the very successful spring teach-in on the future of St. Patrick's College.



Faculty of Science

Dean's Introduction

The year, in many respects, was a period of re-examination and self-appraisal. In part, this was brought about by the decision of the Council of Ontario Universities to establish an Advisory Committee on Academic Planning whose function is to examine the graduate programs of Ontario universities and to make recommendations thereon. Thus far, we are midway through the examination and expect it to be completed in 1974-75. It is difficult to establish the perspective necessary to make a sound judgment concerning this examination while we are in the midst of it, but it would appear that the sciences at Carleton will fare as well as may be expected, and perhaps better, given the history, resources, and size of the university. The fact is, however, that the experience has been a sobering one, and one which has caused the faculty to re-examine its function and goals. We feel that the exercise will, in the long run, prove to have been beneficial, though admittedly the period itself is a time of trial.

The process of re-examination has been exemplified in other ways too. Most of the departments are engaged in experiments which in one way or another are designed to test or introduce new teaching techniques. There is a genuine concern throughout the faculty with the effectiveness of our teaching - in the classroom, in the laboratory, and in the field. This is a wholesome development which must ultimately have a positive and sustained effect on teaching performance, though immediate dramatic effects are not to be expected. In carrying out the twin duties of the faculty member, namely, the transmission and extension of knowledge, our faculty are showing themselves to be responsible and dedicated academics who look forward to meeting the problems of the future with confidence and enthusiasm.

J.L. Wolfson

Policies and Lines of Development

The Faculty of Science has developed, in addition to its five departments, two interdisciplinary committees whose work reflects a major line of development within the faculty.

The Biochemistry program administered by a six-person committee (three biologists and three chemists) with a rotating chairmanship, is strictly an Honours program with students taking three biochemistry courses sponsored jointly by the Departments of Biology and Chemistry, with the remaining courses selected from the biology and chemistry course offerings along with support courses in mathematics and physics. Students in the program are free to choose their research project (*Biochemistry* 63.498) under either department. The two other biochemistry courses are each taught in an interdisciplinary fashion by two instructors, one from chemistry and one from biology. The program continues to attract an increasing number of students although immediate expansion in biochemistry is hampered because of the prior commitments of qualified faculty to their respective departments. Biochemistry is an established scientific description and its horizons continue to expand. In the foreseeable future the demands of society will continue to generate a wide variety of employment opportunities for trained biochemists. The committee hopes for an increasing awareness on the part of the university of the potential for growth and development of this interdisciplinary science.

The General Science Committee, whose program is now called Integrated Science Studies, draws its membership from the science departments and from arts II and engineering. The only courses offered by the committee are an interdisciplinary seminar for third year students and a research course for Honour students. Each student plans a science sequence and a non-science sequence, usually closely linked, which form a well-defined, if unconventional, major. The effect of this is to lead toward the development of science programs which are frequently specifically vocationally oriented and individually designed.

The five science departments have seen their numbers stabilize during the past few years at the undergraduate level, though graduate numbers are up by 16%.

Research plays an important part in the work of all departments. The Department of Biology's Adjunct Professor program has continued to be a highly profitable academic experience for both professors and graduate students. To date, the department has pursued and maintained this program in areas closely allied to the research specialties of its faculty members. For the future the department is hoping to expand the program to provide for graduate studies in other areas of biological research, a project for which the department has received encouraging support from research directors of the federal government. In addition to the appointment of adjunct professors, the department's research capability continues to be enhanced by collaboration through research contracts or shared research interests with scientists in the National Research Council, the National Museum of Natural Sciences, the Department of the Environment and other government and private institutions. Chemistry has recently received an award of a \$40,000 NRC Major Equipment Grant (April 1974) which enabled the XL-100 NMR facility to be expanded to include Fourier Transform capability for both proton and carbon spectra. The facility is now capable of highly sophisticated experiments and will enable more difficult research problems to be tackled by a number of professors and researchers in the department. A high level of research is maintained, with members of the department in demand as lecturers, reviewers, etc. There are continuing good relations with the federal government laboratories. Geology is active in a diversified way in research, with several members involved at both the national and international level. Mathematics stresses its efforts in probability and statistics, in which fields it has become widely known. The department has recently laid plans for broadening its areas of concentration in the immediate future. Physics mentions its highly successful programs in theoretical and experimental particle physics and the shifting thrust in medical physics to exploit some of the techniques of high-energy physics in radiography and diagnosis.

Department chairmen when asked to comment on major obstacles to progress found financial stringency an important restriction. The need for replacing obsolete equipment, the static allowances for sessional lecturers, the need to renovate space and improve laboratory facilities were common concerns.

Undergraduate Programs

On the whole, undergraduate programs are in a fairly settled state at the present time. The Department of Biology is planning to reassess the role of its present B.A. program and to direct it more toward emphasizing the human aspects of biology to include some of its newer society-oriented courses. Although it has no programs especially for part-time students, four evening courses were available in biology. Also the modular field course, with its two-week long modules, could be taken by teachers in vacation periods. The Department of Chemistry is reviewing its programs with an emphasis on the appraisal of teaching methods.

Geology is continuing to analyze and refine its undergraduate offerings. Its "core" program is proving successful and gaining a reputation, being used as a model in several other Canadian universities. The department is also continuing to expand its interdisciplinary interests with joint Honours programs in biology, chemistry and physics, and has a major role in the interdisciplinary courses in technology, society and environmental studies. Geology field camps, which for many years have been run in May following spring examinations, henceforth will be run in September, immediately after Labour Day.

The Department of Physics, following the success of its elementary astronomy course is adding two new interest courses for non-science majors: *Physics of Music* and *Physics of the Environment*. The General Science Committee is actively exploring the use of its resources for development of part-time B.Sc. programs for graduates of the Colleges of Applied Arts and Technology.



Graduate Programs

There is continued development in graduate programs. A growth in interest in biometrics, especially as applied to population biology and ecology, has led to the appointment of two new adjunct professors who join one adjunct and three regular faculty members with competence in this field.

The Department of Chemistry anticipates approval from the Appraisals Committee of the continuation of Ph.D. studies in two areas: bio-organic chemistry and metal ions chemistry. This year has seen a significant increase in the number of graduate students and increased and more diversified research funding. Departmental members are working on more team problems both intra- and inter-departmental, as well as with groups outside the university.

The Department of Geology intends to specialize in three areas at the graduate level: precambrian geology, resource geology, and structural geology and geodynamics. There has been a noticeable improvement in the quality of graduate students and both graduate and undergraduate students continue to have a keen interest in the department's activities and policies.

The Department of Mathematics and the Department of Systems Engineering have begun a combined program at the Master's level in information and systems science. The program will be administered jointly taking advantage of existing resources. During the past year the Ph.D. program in probability and statistics was appraised by three internationally known scholars appointed by the Appraisals Committee of the Ontario Council on Graduate Studies. The three appraisers have unanimously and strongly recommended approval of the program with high praise for its quality. Subsequently the program was approved by the Ontario Council on Graduate Studies.

Teaching Methods

The report of the Department of Chemistry puts great emphasis on evaluating its undergraduate teaching, listing the following seven projects for the coming year: 1) improvement of course presentation by the upgrading of our laboratory teaching; 2) more efficient use of the first-year Resource Centre — extended staffing; 3) reappraisal of the value of our third-year integrated laboratory course (301* /302* /303*). (This is the major task of this year's team instructors); 4) appraisal of the team teaching effectiveness for the freshman class (Chemistry 100) and its inter-relationship with the qualifying year course (Chemistry 10); 5) consolidation of the teaching and performance of computing techniques with respect to chemistry. (It is proposed to present a special introductory series of lectures for chemistry major); 6) exploration of first-year laboratory teaching methods with a view to the introduction of modularized or self-paced techniques or both; and 7) examination of some second-year course formats to better integrate the theory with laboratory techniques.

Most innovative teaching methods in chemistry are in laboratory instruction. Chemistry 100 has an experimental self-paced laboratory program for one section (24 students), and work has begun on the development of a modularized laboratory course to accommodate the total enrolment (450 students). In Chemistry 250 an experimental course is being planned in which the theory will be paced by the organization of the laboratory work. Chemistry 210 will use direct access to computing facilities for the treatment of laboratory data.

The Department of Biology reports that its large first-year *Introductory General Biology* course will be further subdivided along the lines of the experimental division this year into an enriched and a general stream. The department is exploring the use of the extensive Environmental Laboratories with their highly qualified horticultural personnel as a focus for undergraduate projects beginning in the first year. Although the department considers that its teaching techniques are fairly conventional, Professor G.R. Carmody has been working with computer simulation genetics and bacteriological identification.

The Department of Geology found that budget restrictions this past year forced it to reduce its teaching program in two

areas: films for some basic elementary courses, and the amount of field work. Teaching aids, maps, rock samples, and models, are used extensively and much teaching is done in a classroom/laboratory atmosphere.

Physics, also believing that the major changes in undergraduate teaching will occur in the laboratories, plans a thorough examination of its facilities this year.

The Department of Mathematics introduced an important new Honours course at the second year level, *Introduction to the Applications of Mathematics*, 70.260, which is based on an integrated approach to the study of many facets of the mathematical sciences including information and systems science, dynamical systems, probability and statistics, and operations research. In addition, the Department of Mathematics stresses the increasing use of the computer in many courses, and, in particular, in statistics laboratories.

Science and the Community

The Faculty of Science has made a particular effort to bring its programs to the attention of local students and to play an active role in the encouragement of science teaching in the schools.

The Department of Mathematics ran a series of five seminars for senior high school students and their teachers, with over 1000 people attending. It held its second Carleton University Mathematics Competition this year and in addition an informal committee visits high schools to give mathematical talks. Special courses to upgrade qualifications of elementary and secondary teachers have been approved by Senate.

Mr. R. J. Talbot of the Department of Chemistry has been instrumental in setting up the Eastern Ontario Science Education Centre (EOSEC) based at Carleton which is expected to provide a forum for effective contact with science teachers throughout the region. Several local teachers have arranged for their students to visit university laboratories and several staff members have visited local high schools.

The main attraction for students interested in biology has been the living plant collection in the Environmental Laboratories. Dr. Carmody of biology has been working with local high school students in three schools testing his genetics computer-simulation programs. Students have found it stimulating to be given their own computer-generated experimental data, to formulate an hypothesis, to decide what genetic crosses need to be made to test the hypothesis, and to analyze the resulting data.

Another aspect of community interface is, of course, with the government and private agencies. Science makes extensive use of adjunct professors, with mutual benefit, and faculty members act as consultants and serve on NRC and other grant selection committees. Three members of the Department of Biology have been closely involved with task forces of the Man and Resources Committee, and Professor George Setterfield was a member of the provincial Advisory Committee on Academic Planning. Dr. Ken North is continuing to make a most valuable contribution to the public debate on Canadian energy resources both at the national and international level and is one of a very small number of people participating in this debate who is not directly associated with either industry or federal institutions; others in the Department of Geology are investigating pro-

blems of resource management, environment, and pollution. Dr. J.M. Holmes of chemistry was a member of the provincial Committee on University Affairs until its dissolution in April, 1974.

The Science Workshops

An important unit of the Faculty of Science, the Science Workshops design original equipment for research, primarily for departments at Carleton, but also for connected research projects outside the university. They maintain and service experimental equipment. The workshops have earned a reputation in several specialties which attract visitors and result in participation in numerous projects of scientific importance.

High school students come to the workshops for training as part of a work experience program, and the scientific community in Ottawa makes use of the facilities.



Faculty of Engineering

Dean's Introduction

Our most important activities during the last year were the usual ones of teaching and research. Of the other special activities described below we remember most vividly visitations of a team from the Canadian Accreditation Board and several groups of consultants from ACAP. That our efforts and approaches to teaching and research were well received has given us considerable satisfaction.

This last year saw the first year of operation of the School of Industrial Design. As the students are initially enrolled in either architecture or engineering, it has been possible to devote major effort to planning, which is a vitally important activity as the school is a unique innovation not only at Carleton but in English-speaking Canada.

The School of Architecture, having graduated its first students, is now contemplating the next stage of development. Graduate work, non-professional undergraduate programs, and professional work within the school are possible areas for intensive development over the next few years.

In engineering, the evolution of our administrative and registrarial procedures has continued and it is hoped that we are close to an optimal arrangement. Departmental activities during the year were varied, although all reflected the fact that the undergraduate programs are both distinctive and of high quality and are increasingly gaining national recognition. Our graduate programs, on the other hand, although well conceived and taking advantage of the particular Ottawa environment, have not yet achieved that same wide recognition. While they are well appreciated in Ottawa, they are not sufficiently recognized elsewhere. We believe that it is appropriate to direct particular attention to graduate work and to research over the next few years and that this should result in no deterioration of our undergraduate work, but rather a further strengthening. Unfortunately, budgetary constraints have prevented an expected major thrust in the area of continuing education for practising engineers but it is hoped that resources will eventually allow development of this increasingly important area of engineering education.

D.A. George

Policies and Lines of Development

The Faculty of Engineering has developed strong undergraduate programs built around a common core of courses taken in the first three years. The associated Schools of Architecture and Industrial Design have followed a similar pattern with input and co-operation from engineering, and from each other.

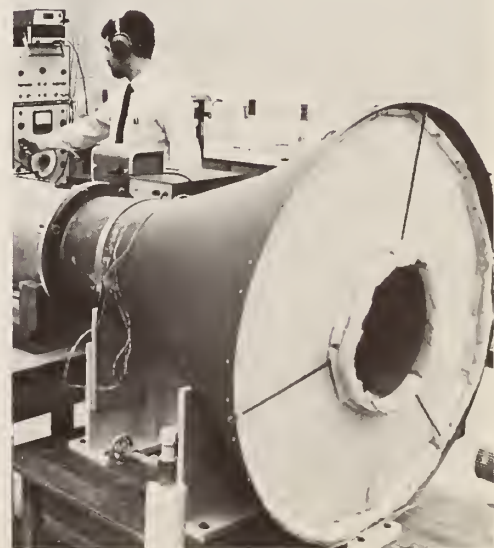
During 1973-74, the major divisions of the faculty became 'departments': civil engineering, electronics and materials engineering, mechanical and aeronautical engineering, and systems engineering. In general the transition was accomplished smoothly and has been accompanied by an increase in departmental autonomy, although centralized administration and control from the Dean's Office continue where this mode of operation is clearly advantageous to the faculty.

In recent years engineering has become accustomed to scrutiny from the outside, from *The Ring of Iron* in 1970 through a study of graduate programs by ACAP last year and a review of undergraduate programs by a team from the Canadian Accreditation Board last February. The faculty is considered to have a "sound, successful, and distinctive" undergraduate program and its graduate work in electrical and systems engineering especially was highly regarded.

Most chairmen report financial and budget difficulties and lack of competitiveness in salary levels. Teaching loads are heavy and chairmen emphasize the need to recognize outside professional activities as a legitimate and indeed essential part of a faculty member's activities.

Research activity is growing within the faculty. Electronics and materials engineering reports all its faculty involved in research, eight in electronics and two in materials, with projects ranging over the fields of solid state devices, circuits, micro-waves and optics. The research program of the department is carried out in close association with government and industrial research laboratories in the Ottawa area. Mechanical and aeronautical engineering has grants from NRC, a major grant from the Department of Energy, Mines and Resources, which will result in the development of new courses in the energy and environmental areas, and a grant from the Ford Foundation. Systems engineering has expanded its work in the Wired City Laboratory, broadening its scope to include a particular emphasis on uses of educational technology. Co-

operation with the Department of Psychology and the federal Communications Department have considerably benefited the project. A second major interdisciplinary project, conducted jointly by the Departments of Systems Engineering and Linguistics, lies in the area of speech processing. Recent developments in the real-time synthesis of human speech have greatly increased the potential of this work for the development of reading aids to the blind.



Undergraduate Programs

Undergraduate programs in engineering changed little during the past year. The "Core Committee" of the faculty, however, has been studying the three year common core program and will be making recommendations this year.

Civil engineering strengthened its 99.497, *Engineering Project* course, increasing its formality and the amount of faculty involvement and plans to continue in this direction.

Systems engineering, which operates the Computing Science program, is adding courses in computing and in the related areas of software engineering and digital systems architecture for 1974-75. Systems engineering is also considering a B. Eng. program, the graduate of which would possess a strong background in applied science and mathematics, some knowledge of simulation and modelling, economics, computer applications, and management, together with a further specialization in some aspect of a more traditional engineering discipline.

Mechanical and aeronautical engineering report no significant changes in their undergraduate programs but a concentration on improving third year labs in fluids, thermodynamics, and design. The chairman mentions student enthusiasm for and achievements in group projects and major successes in inter-university competitions such as the concrete canoe contest and the recreational vehicle competition.

Architecture has developed the first two years of its undergraduate program as the fundamental core of the upper level wholly elective program, particularly in studio work. *The Forum*, a series of weekly evening events, has provided an important input of people and ideas into, and as an extension of, the Colloquium Division courses.

The School of Industrial Design, whose director arrived last September from his former post as Director of the Academy of Industrial Design, Eindhoven, the Netherlands, and whose first students also arrived in September, is working on its undergraduate program with close links with both the engineering departments and the School of Architecture. There will be few changes in 1974-75, but in 1975-76 faculty members will be appointed to the school and students who will have completed the core program will be able to branch out into new electives.

Graduate Programs

Most departments point to growth and change in graduate programs. Civil engineering notes an increase of 58 graduate student courses to 134, although fewer faculty members were available. Cooperation is continuing with the University of Ottawa.

At the graduate level, systems engineering continues to emphasize an integrated approach to information systems engineering. A joint program of studies at the Master's level in information and systems science was instituted in cooperation with the Department of Mathematics, allowing students with a considerable variety of quantitative backgrounds outside of engineering or mathematics to pursue a program in the areas of computing science, dynamic systems analysis, communications systems, optimization, simulation and modelling, digital systems design, and software engineering.

Electronics and materials engineering reports graduate programs in both areas with the main thrust in electronics. The existing graduate program in the solid state device area is undergoing minor development and change in response to research progress in the field and changing requirements for part-time graduate students in the Ottawa area.

The Department of Mechanical and Aeronautical Engineering is emerging from a period of comparatively low activity with small numbers of graduate students into some promising new ventures and a greatly increased student body. An effort has been made to recruit good Canadian students but the numbers going on to graduate work in mechanical engineering in Canada are extremely small. The chairman suggests that increased scholarships are necessary to counter the financial disincentives of graduate studies. A similar solution is mentioned by the chairman of civil engineering to the shortage of graduate students in his field.

Teaching Methods

Undergraduate teaching has a high priority in engineering with class sizes controlled at all levels and senior faculty members teaching first year and core courses. There has been experimentation in teaching methods and the dean of engineering is the chairman of the Senate Committee on Instructional Development. The chairman of civil engineering discusses the engineer's approach to teaching: "The members of this department are all concerned with teaching. They are all, at the same time, engineers who understand that experiments can fail. For them the definition of the problem involved in teaching methods is not clear. They are in possession of a satisfactory solution which has served well and are not convinced that it is not the optimal solution. To begin any experiment without the preliminary development of objectives, relevant theory, alternative solutions, measurement techniques, criteria of success, and expected pay-off is not in their nature."

Civil engineering uses "traditional methods", described as "a combination of lectures, problem solving in sessions with faculty assistance available, assigned problem solving for individual work, laboratory demonstration and experiments, and design projects, both group and individual." This past year they instituted an introduction to civil engineering held during the first week of the fall term, the purpose of which was to portray the breadth of engineering and the interactions within it before proceeding to the regular subject-by-subject studies. Each member of the department introduced himself and his area of interest; introductory lectures in all courses were held; and a series of guest speakers, usually recent graduates, discussed projects on which they had worked. The week culminated in a day-long visit to the site of the new international airport in Montreal.

Systems engineering runs most of its courses as one-term lecture series with one instructor for each section. Grades are assigned on the basis of a combination of term work (including laboratory where applicable) and a final examination. There are several variations from pattern. The "modular course" of one term is typically subdivided into four sections of about three weeks each. Students write tests at the end of each module; in some cases (notably 94.361, *Systems and Machines*) the student may write tests at various different levels corres-

ponding to different grade points. Modular courses given at the undergraduate level to date rely primarily upon one lecturer. At the graduate level, modular courses planned for 1974-75 will make use of four different lecturers, each presenting material on separate but related topics. The sequence of modules in this case will not necessarily imply a prerequisite structure. Another variation in course presentation, not necessarily associated with a modular structure, makes extensive use of outside guest lecturers. In 94.415, *Engineering Management*, the majority of lecturer material was covered in this way. Over the past two years considerable effort has gone into the development of video tape presentations covering specific parts of courses. These are deposited in a tape library, so that students have access to them as and when necessary.

Class size at the graduate level presents a problem in this department: several courses last year had more than 30 students and one had nearly 50. Steps are being taken to subdivide these classes for 1974-75 but the size will probably still be the highest, on average, of any in the university.

The Department of Mechanical and Aeronautical Engineering considers itself not notably innovative. The chairman says: "We place a major emphasis on the professional aspects of engineering and rely heavily on feedback into teaching of the enthusiasm and experience of the professional, active faculty member. By the same token we expect the faculty member's research to be relevant to engineering practice and for this to inspire his teaching and supervision of graduate students."

The department makes use of video taped material to supplement laboratory classes, particularly in fluid mechanics, and has adopted a combination of case studies and group projects as an effective way to treat the subject of design. A "shortcourse" format has been used to cover two particular areas of technology for limited specialist audiences: a course on *Gas Turbine Design and Performance* by Professor H.I.H. Saravanamuttoo, and a course on *Stress Analysis by Finite Element Methods for Practising Engineers*, by Professor W.E. Bowes.

Engineering and the Community

Engineering, architecture, and industrial design interact with the community mainly through the professional involvement of faculty members. In the Ottawa area the technologically oriented government/industry/university complex presents an opportunity unique in Canada. The chairman of systems engineering shows the advantages of this opportunity to his department: "... co-operative projects exist with the University of Ottawa, the Department of Communications, the Communications Research Center, the National Research Council, Bell Northern Research Laboratories, the Ministry of State for Urban Affairs, the Department of Energy Mines and Resources, and the federal Post Office Department. In addition, members of the department now serve, or have served in the recent past, in executive or committee positions with the Association of Professional Engineers of Ontario, The Institute of Electrical and Electronics Engineers, and the Canadian Association for Information Science. Within the university community, the Canadian Conference on Electrical Engineering Education was held in June 1974 under the joint sponsorship of Carleton University (Departments of Systems Engineering and of Electronics and Materials Engineering) and the University of Ottawa (Department of Electrical Engineering)."

The Department of Mechanical and Aeronautical Engineering mentions the influence on public policies that faculty members can have: for example, Professor Julius Lukasiewicz' studies of Canadian railways and Professor J.T. Rogers' work on nuclear power and energy utilization. They also mention Dr. Gordon Bigg's efforts in Bangladesh where he is helping to reconstruct the small boat industry using ferro-cement techniques.

The School of Architecture uses real community problems for its studio work and the community has been enthusiastic about its client role with the school. Its *Forum* talks, lectures, and panel discussions have been well attended: for example, the panel on the *Profit Motive in the City*.

The School of Industrial Design has established a fruitful co-operation with the Zinc Institute and has made contacts with several industries which will be vital for the organization, in 1975, of Industrial Practice Internships. In the drawing up of the program, advice was obtained from many interested groups. Last March the Association of Canadian

Industrial Designers/Ontario issued a statement of interest in and support of the Carleton program. Also in March, radio station CFGO, in a day-long program, *In Depth*, paid considerable attention to the phenomenon of industrial design and the philosophy of the school. The program's emphasis was entirely on the interface of design and the community.

Another aspect of the interface is the work of the faculty and schools in interesting students at both the undergraduate and graduate levels in Carleton's programs. Mention has been made earlier of the difficulties in recruiting Canadian students at the graduate level. At the undergraduate level all the programs are becoming increasingly popular. Architecture has to hold its numbers down by careful selection and would be capable of considerable expansion. The new industrial design program received insufficient publicity last year owing to the lateness of its approval but the school is planning to pay special attention to explaining its program both to students in the high schools and to those in other engineering programs who might wish to specialize in industrial design in their third and fourth years. It may also be possible to accept students from the technology programs of the Colleges of Applied Arts and Technology.

The Faculty of Engineering has a program for informing high school students of its work and all departments contribute. Activities in this direction include visits to high schools and the organization of a biennial engineering "Open House". In addition the Department of Systems Engineering has co-operated with departments of mathematics in a number of local high schools in making available computing facilities for high school students.

Faculty of Graduate Studies and Research

Dean's Report

Carleton is a relatively young institution and its programs of graduate studies are of very recent vintage. Carleton awarded its first Master's degrees less than 20 years ago and its first Doctoral degree only some ten years ago. Yet, during this very short period, graduate studies have grown exponentially as one can see from the table below.

Number of graduate degrees awarded by Carleton University

	Master's	Doctoral
1954-58	10	—
1959-63	52	1
1964-68	424	22
1969-73	1265	88

Despite this exponential growth, Carleton still had less than two percent of the Doctoral students and less than three percent of the Master's students in Canada, even in the last year of the last quinquennium. However, the university has evolved, on the basis of both its internal resources and the external comparative advantages derived from the proximity of national laboratories and other federal agencies, a specific contour for its work at the graduate level.

John Ruptash, as dean of the Faculty of Graduate Studies from 1969-1973, did much to streamline and improve the administrative apparatus of the faculty during a period of substantial growth for graduate studies. His efforts were directed toward making Carleton a truly mature graduate institution. These efforts must continue and evolve as the university plans its future development in such a way as to make the highest and best uses of its potentialities.

1973-74 was a year of reflection, of consolidation, of transition. The major theme of discussion, triggered by the Faculty of Graduate Studies in almost all departments and faculties, revolved around the very intimate relationship between graduate studies and research, and the best ways to promote symbiotic relationships between them.

Following these discussions, Carleton decided to nest both graduate studies and research in the same jurisdiction. This was seen as the best way to guarantee that the monitoring and planning of the research effort at the university would be done by academics, in full cognizance of the responsibilities inherent in the acceptance of a graduate instruction vocation.

On April 8, 1974, the Senate of Carleton University approved the Faculty of Graduate Studies and Research. As a result the university would, *on the graduate front*, be better able to focus on planning and monitoring functions designed to ensure and maintain the highest standards of instruction and the highest quality relationship between graduate students and their mentors, and, *on the research front*, be better able to focus on the information, service and animation functions designed to help the members of the community make the highest and best use of their potentialities and of the resources available for individual and group research.

Another important, tangible result of our reflection has been the formulation of three sets of questions which have not received complete answers as yet but are bound to be at the centre of any development strategy we may evolve and at the core of our process of adaptation over the coming years: 1) What are Carleton's and the Ottawa university community's roles in the Ontario and the Canadian systems of higher learning? What are the areas in which we clearly have internal and external comparative advantages? 2) What are the best ways to ensure statutory commitments to research and encouragement of scholarship at Carleton and in the university system? 3) What activities at the university are best monitored and regulated: a) within a university, b) within the university system, c) outside the university system, and how?

The tapestry of programs composing Carleton's fabric at this time does not constitute a fully integrated set nor a complete one, even within the confines posited by our major options. But marginal adjustments are continually being planned and implemented. Already the extension of our work at the graduate level in 1973-74 to social anthropology and journalism and the current planning of our program in administrative studies have been and are an embodiment of our comparative advantages. The nature of these and other planned programs has been thought through as a deliberate strategy to extend our current offerings in a direction likely to fill gaps in our present offerings and to take the fullest advantage of our circumstances.

The needs, priorities and styles of research differ significantly from one sector of the university to another. But common to all sectors is the fact that research requires time and money. Through the usual channels, Carleton faculty

members and their senior students are receiving a fair amount of support, but much of the research funding is still done along disciplinary lines and it does not provide sufficiently for the financing of the necessary infrastructure for continuous work on broad issues, crying for some critical work but falling outside the bailiwick of any one client. Carleton has made some effort to identify some of the broad areas where it has some expertise and where it would be likely to make a contribution. Work on a modest scale has begun but it cannot progress very fast until statutory commitments to research and scholarship are made.

This is one point where younger and smaller institutions are at a disadvantage vis-à-vis older universities which, given the current form of financing of universities, "receive large additional sums of monies (tied to graduate enrolments) which allow them to devote a disproportionately large amount of their total faculty time to research than other mainly younger and smaller institutions." While much can be done to promote research and scholarship within the present constraints, the whole question of statutory commitments by universities and the university system *in toto* to the research function is in need of some further probing.

Finally, the ACAP experiment has very clearly raised the question of the monitoring and regulation of graduate work in Ontario. Even so, its activities have occurred thus far without any preliminary and serious discussion of the optimal level and type of regulation to apply to universities as institutions and to the university system as a whole. One important danger of the current fragmented and discipline-oriented approach of ACAP and of the consequent further fragmentation of fields in "specialized" areas might be to generate a paralysis of the system's capacity to transform and adapt to new environments. In 1973-74, Carleton began to develop institutional ways to preserve its capacity to transform and to promote the search for new arrangements in areas where such danger was perceived. However, so long as the university system recognizes as its objective the provision of a balanced research/teaching mix, but does not guarantee for all its parts the basis and latitudes necessary for comfortable institutional planning, experimentation is bound to be very limited.

In 1974, Carleton graduated some 18 Doctoral students and more than 260 Master's students; it has designed and

Academic Statistics 1973-1974

constructed a new and better instrument for institutional planning, namely its Faculty of Graduate Studies and Research; but more importantly, it has initiated a process of critical thinking of enormous consequence. Some results have already been acknowledged but the main impact is still to come and it shall importantly affect the social architecture of Carleton University. In the words of Jean Paulhan, "Qui commence par le rêve et la folie sait très bien où il va: à la folie et au rêve. Mais le raisonnement nous jette en pleine aventure."

Gilles Paquet

The annual report questions included a number of statistical sections. Based on the response of the departments a set of statistics has been developed which may help in understanding the work of the various departments.

The following tables contain information by department and faculty or division, on the number of undergraduate student courses, the number of full-time Honours students, the number of full-time graduate students and the number of full-time faculty on campus.

Notes on Academic Statistics Tables

1. Column (1) normally corresponds to academic departments, however in certain cases programs are listed.
2. Column (2) is a listing of the number of weighted undergraduate student courses.
3. In column (3) combined Honours students are allocated half to each department.
4. Column (4) lists the number of Masters and Doctoral students.
5. Column (5) lists the number of full-time faculty members on campus. The fractional amounts arise because small split appointments are prorated and persons on leave for only one term are included as one half.



Table 1

Academic Statistics 1973/74

(1) Faculty/Division	(2) No. of Undergraduate Student Courses	(3) No. of F.T. Honours	(4) No. of F.T. Graduates	(5) No. of Faculty Members on Campus
Arts I	14044.0	968.0	97	171 1/6
Arts II	16855.5	1001.5	337	152 1/6
St. Patrick's	4016.5	51.0	0	42 1/2
Science	7212.5	508.5	112	102
Engineering	4487.0	959.0	82	59 2/3
TOTAL	46615.5	3488.0	628	527 1/2

Table 2

Arts I

(1) Department	(2) No. Of Undergraduate Student Courses	(3) No. of F.T. Honours	(4) No. of F.T. Graduates	(5) No. of Faculty Members on Campus
Art History	601.0	22.5	0	4 1/2
Canadian Studies	0	0	14	1
Classics	410.0	5.5	0	5
Comp. Lit.	22.0	0	10	1 2/3
English	3612.0	223.5	30	45 1/2
French	1758.5	59.0	8	21 5/6
German	342.0	13.5	4	6
History	2144.0	139.5	17	29 1/6
Italian	148.0	0.5	0	3
Journalism	1650.5	411*	0	16
Linguistics	428.0	14.0	0	3 1/2
Music	480.0	5.5	0	4
Philosophy	751.5	32.0	3	8
Religion	825.5	9.5	0	9
Russian	299.0	9.0	0	4
Spanish	572.0	23.0	11	9
TOTAL	14044.0	968.0	97	171 1/6

* Includes students enrolled in the 1 year B.J. program

Table 3

Arts II

(1)	(2)	(3)	(4)	(5)
Department	No. of Undergraduate Student Courses	No. of F.T. Honours	No. of F.T. Graduates	No. of Faculty Members on Campus
Accounting/Commerce	870.0	353.0	0	4
Economics	3054.5	55.5	11	23
Geography	1298.5	108.5	14	13 5/6
International Affairs	0.0	0.0	43	2
Law	1779.0	6.0	0	9 1/2
Political Science	2691.5	124.0	66	31 1/2
Psychology	3983.0	182.5	32	27 5/6
Public Administration	120.0	46.0	20*	3
Social Work	0.0	0.0	108	11 1/2
Sociology and Anthropology	3055.0	107.0	40	25 1/2
Soviet and East European Studies	4.0	19.0	3	1/2
TOTAL	16855.5	1001.5	337	152 1/6

* Includes students enrolled in the Diploma in Public Administration Program

Table 4

St. Patrick's College

(1)	(2)	(3)	(4)	(5)
Department	No. of Undergraduate Student Courses	No. of F.T. Honours	No. of F.T. Graduates	No. of Faculty Members on Campus
Total	4016.5	51.0	0	42 1/2

Table 5

Science

(1) Department	(2) No. of Undergraduate Student Courses	(3) No. of F.T. Honours	(4) No. of F.T. Graduates	(5) No. of Faculty Members on Campus
General Science	196.0	8.0	0	1
Biochemistry	72.0	48.0	0	0
Biology	1475.5	176.5	29	20 1/2
Chemistry	1136.5	63.5	17	17
Geology	666.5	80.5	24	13
Mathematics	2749.5	94.0	26	35 1/2
Physics	916.5	38.0	16	15
TOTAL	7212.5	508.5	112	102

Table 6

Engineering

(1) Department	(2) No. of Undergraduate Student Courses	(3) No. of F.T. Honours	(4) No. of F.T. Graduates	(5) No. of Faculty Members on Campus
Civil	665.5	51	18	9 1/2
Mechanical & Aeronautical	855.5	41	15	11 1/2
Systems	542.5	0	26	9
Computing Science	405.5	0	0	0
Electronics & Materials	463.0	50	23	9 1/2
Interdisciplinary	83.0	0	0	0
Engineering Sub-total	3015.0	699*	82	39 1/2
School of Architecture (including Industrial Design)	1472.0	260	0	20 1/6
TOTAL	4487.0	959*	82	59 2/3

* The subtotals and total for engineering include those honour students in first, second and third year. These students are not allocated to the individual engineering departments.

Deans, Directors and Chairmen 1973-74

Faculty of Arts, Division I (Humanities)

Dean A.T. Tolley (Marston LaFrance)*

Art History, Department of	Chairman	E.E. Hirshler (D.G. Burnett)*
Canadian Studies, Institute of	Director	A.D. Dunton
Classics, Department of	Chairman	T.R. Robinson
Comparative Literature, Committee on	Chairman	H.-G. Ruprecht
English, Department of	Chairman	James Downey
French, Department of	Chairman	H.P. Clive
German, Department of	Chairman	R.D. Gould
History, Department of	Chairman	P.J. King
Journalism, School of	Director	G.S. Adam (Marvin Schiff, Acting Director, July 1, 1974 - December 31, 1974)
Linguistics, Department of	Chairman	I.W.P. Pringle (W.G. Cowan)*
Music, Department of	Chairman	William Amtmann (John Churchill)*
Philosophy, Department of	Chairman	J.W. Leyden
Religion, Department of	Chairman	L.M. Read (S.G. Wilson)*
Russian, Department of	Chairman	V.I. Grebenschikov
Spanish & Italian, Department of	Chairman	R.L. Jackson

Faculty of Arts, Division II (Social Sciences)

Dean R.A. Wendt

Commerce, School of	Director	J.B. Waugh (Acting)
Economics & Accounting, Department of	Chairman	Georg Rich (N.H. Lithwick)*
Geography, Department of	Chairman	D.M. Anderson
International Affairs, School of	Director	P.E. Uren
Law, Department of	Chairman	J.A. MacKenzie
Political Science, Department of	Chairman	N.H. Chi
Psychology, Department of	Chairman	T.N. Tombaugh
Public Administration, School of	Director	G.B. Doern
Social Work, School of	Director	James Albert
Sociology & Anthropology, Department of	Chairman	Muni Frumhartz
Soviet & East European Studies, Institute of	Director	Teresa Rakowska-Harmstone

* indicates a new appointment effective July 1, 1974

Faculty of Arts, St. Patrick's College

Dean H.A. MacDougall

Co-ordinators

Classics, Department of
Economics, Department of
English, Department of
French, Department of
Mathematics, Department of
Philosophy, Department of

Political Science, Department of
Psychology, Department of
Religion, Department of
Sociology, Department of
Spanish, Department of
Unified Liberal Arts Program (ULAP)

Roland Jeffreys
R.F. Neill
J.R. Morrison
J.J. Kelly
Marianne Helfenstein
Bela Egyed
(Diane Dubrule)*
Frederic Kirk
D.A. Andrews
John Dourley
F.K. Hatt
Adolfo Lozano
John O'Manique

Faculty of Engineering

Dean D.A. George

Civil, Department of
Electronics & Materials, Department of
Mechanical & Aeronautical, Department of
Systems, Department of
Industrial Design, School of
Architecture, School of

Chairman
Chairman
Chairman
Chairman
Director
Director

Technology, Society and Environment

Chairman

D.A. Kasianchuk
(W.H. Bowes)*
A.R. Boothroyd
W.J. Rainbird
J.S. Riordon
Willem Gilles
Douglas Shadbolt
(J.W. Strutt, Interim Director,
January 1 to June 30, 1974)
Julius Lukasiewicz

* indicates a new appointment effective July 1, 1974

Faculty of Science

Dean H.H.J. Nesbitt (J.A. Wolfson)*

Biology, Department of	Chairman	J.M. Neelin (J.A. Webb)*
Biochemistry	Chairman	J.W. ApSimon
Chemistry, Department of	Chairman	J.W. ApSimon
Geology, Department of	Chairman	W.M. Tupper
Mathematics, Department of	Chairman	Vlastimil Dlab (Donald Dawson)*
Physics, Department of	Chairman	R.L. Clarke
General Science Degree Program	Chairman	Cooper Langford

Faculty of Graduate Studies

Dean Gilles Paquet

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